

Associate in Science Degree

ENGINEERING MAJOR PLANNING SHEET

Joliet Junior College

Student Academic Plan 2020-2021 Catalog

New students: Please see ADMITTED STUDENT STEPS prior to registration

Name: _____

Major: _____

EGR Advisor: Laura Cotner

MAIL: lcotner@jic.edu

Student ID#: _____

Transfer School(s): _____

Date of Plan: _____ Catalog Year: _____

Communications 9 hours - Must get "C" grades in ENG 101/102	Social Science 6 hours - Choose 2 - At least 2 areas are required	Humanities & Fine Arts 6 hours - Choose 1 course in Humanities & 1 course in Fine Arts	Math 4 hours -Choose 1 course	Life & Physical Sciences – 7 hours - Choose 1 Life Science & 1 Physical Science -One course must include a lab	Additional Science and Related courses – 17 hours -Must include 1 additional (4 hr.) math and 1 additional science. Remaining courses must be from the approved list in the JJC catalog.
<p> _____ ENG 101* (3) _____ _____ ENG 102* (3) _____ _____ COMM 101* (3) _____ (previously SPCH 101) Total Hours: _____ Developmental Prerequisites _____ Eng 020 (3) _____ _____ Eng 021 (3) _____ _____ Eng 022 (2) _____ _____ Eng 098 (3) _____ _____ Eng 099 (3) _____ NOTES: <ul style="list-style-type: none"> • An asterisk (*) indicates that the course has a prerequisite or required placement score. • Courses whose IAI number ends with an "N" indicate a course that will meet a non-western course requirement. Courses whose IAI number ends with a "D" indicate a course that will meet a diversity requirement. (See reverse side for IAI numbers.) </p>	<p> _____ ANTH 101 (3) _____ _____ ANTH 275 (3) _____ Rec _____ ECON 103 (3) _____ _____ ECON 104* (3) _____ _____ GEOG 102* (3) _____ _____ GEOG 104* (3) _____ _____ GEOG 106* (3) _____ _____ HIST 103 (3) _____ _____ HIST 104 (3) _____ _____ HIST 107 (3) _____ _____ HIST 108 (3) _____ _____ HIST 260 (3) _____ _____ HIST 290 (3) _____ _____ PSCI 101 (3) _____ _____ PSCI 102 (3) _____ _____ PSCI 103 (3) _____ _____ PSYC 101 (3) _____ _____ PSYC 208*(3) _____ _____ PSYC 209*(3) _____ _____ PSYC 210*(3) _____ _____ PSYC 215*(3) _____ _____ SOC 101* (3) _____ _____ SOC 220 (3) _____ _____ SOC 270 (3) _____ _____ SOC 280 (3) _____ _____ SOC 290 (3) _____ Total Hours: _____ </p>	<p> Humanities _____ ENG 103* (3) _____ _____ ENG 104* (3) _____ _____ ENG 105* (3) _____ _____ ENG 106* (3) _____ _____ ENG 109* (3) _____ _____ ENG 201* (3) _____ _____ ENG 202* (3) _____ _____ ENG 203* (3) _____ _____ ENG 204* (3) _____ _____ ENG 208* (3) _____ _____ ENG 209* (3) _____ _____ ENG 220* (3) _____ _____ ENG 221* (3) _____ _____ ENG 250* (3) _____ _____ ENG 260* (3) _____ _____ ENG 270* (3) _____ _____ HIST 105 (3) _____ _____ HIST 106 (3) _____ _____ HIST 200 (3) _____ _____ PHIL 101* (3) _____ _____ PHIL 102* (3) _____ _____ PHIL 103* (3) _____ _____ PHIL 104* (3) _____ _____ PHIL 105* (3) _____ _____ PHIL 106* (3) _____ _____ SOC 240* (3) _____ _____ FRCH 104* (4) _____ _____ SPAN 104* (4) _____ Fine Arts _____ ART 109 (3) _____ _____ ART 115 (3) _____ _____ ART 116 (3) _____ _____ ART 117 (3) _____ _____ ENG 190 (3) _____ _____ MUS 101 (3) _____ _____ MUS 102 (3) _____ _____ MUS 103 (3) _____ _____ MUS 107 (3) _____ _____ THEA101 (3) _____ Total Hours: _____ </p>	<p> _____ MATH 170* (5) _____ Developmental Prerequisites _____ Math 090 (3) _____ _____ Math 094 (4) _____ _____ Math 098 (4) _____ _____ Math 095 (4) _____ Verification of Geometry Prerequisite via HS transcripts, placement testing or MATH 095 completion is required for Math 123, 124, 131, 138, 142 NOTES: <ul style="list-style-type: none"> • Math 170 may have college-level pre-reqs that are used as electives. • Initial placement is determined by placement test or other approved standardized tests. • Math hours in this group beyond 4 will carry over as 'Additional Science and Related' courses or electives. </p> <p>Total Hours: _____</p>	<p> Life Sciences (Underlined and italicized is a non-lab course.) _____ BIO 104* (5) _____ _____ BIO 105* (4) _____ _____ BIO 106* (4) _____ _____ BIO 107* (4) _____ _____ BIO 125* (4) _____ Rec _____ BIO 144* (3) _____ or Rec _____ BIO 146* (3) _____ _____ BIO 149* (4) _____ _____ BIO 151* (5) _____ _____ BIO 152* (5) _____ Physical Sciences _____ CHEM 100* (5) _____ (if needed) _____ CHEM 101* (5) _____ NOTE: Science hours in this group beyond 7 will carry over as 'Additional Science and Related' courses or electives. <i>Students will generally exceed the number of credits required for the AS degree if they complete all science courses required for junior status after transfer.</i> Students have the option of completing some sequences after transfer. Total Hours: _____ </p>	<p> _____ MATH 138* & 139 (4 each) _____ or _____ MATH 142* (5) _____ *Take Math 138, 139, or 142 only if needed based on math placement test scores. Most Engineering majors must have math up to 220 and at least 2 semesters of Engineering Physics. _____ MATH 171* (4) _____ _____ MATH 172* (4) _____ _____ MATH 220* (3) _____ _____ PHYS 201* (5) _____ _____ PHYS 202* (5) _____ Hours in this group beyond 17 will count as general electives below. Total Hours: <u>21</u> (varies) _____ Electives- 15 hours -Carry over hours from the Math and Science columns can be used as electives. CARRY OVER HOURS from ABOVE: _____ 5++ _____ _____ () _____ _____ () _____ _____ () _____ - Select electives that fulfill the specific sequences related to your engineering discipline and required by your transfer school such as EGR, PHYS, MATH, CIS or CHEM. Total Hours: _____ </p>
<p> NOTES: Courses with "Rec" in front of them indicate a recommended (but not required) course. Refer to the next pages for additional important information. PLEASE see the ENGINEERING ADVISOR for academic planning and transfer information. </p>					

ASSOCIATE IN SCIENCE DEGREE: Illinois Articulation Initiative (IAI) (www.itransfer.org)

JJC is a participant in the IAI - an agreement among Illinois colleges and universities to make the transfer of credits as easy as possible. Currently the IAI allows for the transfer of the General Education Core Curriculum (GECC) among the more than 100 participating public and private colleges and universities. Completion of the GECC at any participating community college in Illinois guarantees that transferring students will be granted equivalent credit for the minimum general education program of the receiving four-year college or university. The 2019-20 AS degree does not fulfill the IAI GECC in the Social Science and Humanities/Fine Arts categories. It is expected that students will complete the remaining 2 courses after transfer.

Category I – Communications (9 hrs.)

ENG 101 - Rhetoric (C1 900)

ENG 102 - Rhetoric (C1 901R)

COMM 101 - Principles of Speech (C2 900)

Category II – Social and Behavioral Science (6 hrs.)

Complete 2 courses from different subject areas.

ANTH 101 - Introduction to Anthropology (S1 900N)

ANTH 275 - Cultural Anthropology (S1 901N)

ECON 103 - Principles of Economics I (S3 901)

ECON 104 - Principles of Economics II (S3 902)

GEOG 102 - World Regional Geography (S4 900N)

GEOG 104 - Introduction to Economic Geog. (S4 903N)

GEOG 106 - Cultural Geography (S4 900N)

HIST 103 - History of the United States to 1865 (S2 900)

HIST 104 - History of the United States 1865 to Present (S2 901)

HIST 107 - World History to 1500 (S2 912N)

HIST 108 - World History since 1500 (S2 913N)

HIST 260 - History of the Middle East (S2 918N)

HIST 290 - History of Africa (S2 906N)

PSCI 101 - American National Government (S5 900)

PSCI 102 - American State and Local Government (S5 902)

PSCI 103 - Introduction to Comparative Government (S5 905)

PSYC 101- General Psychology (S6 900)

PSYC 208 - Social Psychology (S8 900)

PSYC 209 - Child Psychology (S6 903)

PSYC 210 - Child and Adolescent Development (S6 904)

PSYC 215 - Life Span: A survey of Human Development (S6 902)

SOC 101 - Introduction to Sociology (S7 900)

SOC 220 - Sex, Gender, and Power (S7 904D)

SOC 270 - Marriage and the Family (S7 902)

SOC 280 - Sociology of Social Problems (S7 901)

SOC 290 - Cultural Diversity in America (S7 903D)

Category III – Humanities/Fine Arts (6 hrs.)

Select one course from the Humanities list and one course from the Fine Arts list. List continues in the next column.

HUMANITIES

ENG 103 - American Literature (H3 914)

ENG 104 - American Literature (H3 915)

ENG 105 - Survey of English Literature (H3 912)

ENG 106 - Survey of English Literature (H3 913)

ENG 109 - Children's Literature (H3 918)

ENG 201 - Introduction to Poetry (H3 903)

ENG 202 - Introduction to Fiction (H3 901)

ENG 203 - Introduction to Drama (H3 902)

ENG 204 - Introduction to Literature (H3 900)

ENG 208 - Masterpieces of Western Civilization (H3 906)

ENG 209 - Masterpieces of Western Civilization (H3 907)

ENG 220 - Non-Western Literature in Translation (H3 908N)

ENG 221 - Literature of Asia (H3 908N)

ENG 250 - Introduction to Shakespeare (H3 905)

ENG 260 - Minority American Literature (H3 910D)

ENG 270 - Introduction to Women Writers (H3 911D)

FRCH 104 - Intermediate French II (H1 900)

HIST 105 - History of Civilization I (H2 901)

HIST 106 - History of Civilization II (H2 902)

HIST 200 - History of Great Britain since 1688 (H2 908)

PHIL 101 - Introduction to Philosophy (H4 900)

PHIL 102 - History of Philosophy (H4 901)

PHIL 103 - Introduction to Ethics (H4 904)

PHIL 104 - Introduction to Logic/Critical Thinking (H4 906)

PHIL 105 - Contemporary Moral Issues (H4 904)

PHIL 106 - Philosophy of Religion (H4 905)

SOC 240 - Introduction to Comparative Religion (H5 904N)

SPAN 104 - Intermediate Spanish II (H1 900)

FINE ARTS

ART 109 - Introduction to the Visual Arts (F2 900)

ART 115 - Intro to Ancient/Medieval Art (F2 901)

ART 116 - Intro to Renaissance & Baroque Art (F2 902)

ART 117 - Introduction to Modern Art (F2 902)

ENG 190 - Introduction to Film Study (F2 908)

MUS 101 - Exploration of Music Literature (F1 900)

MUS 102 - Exploration of American Music (F1 904)

MUS 103 - Evolution of Jazz (F1 904)

MUS 107 - Music in World Cultures (F1 903N)

THEA 101 - Introduction to Theatre (F1 907)

Category IV – Physical and Life Sciences (7 hrs.)

Must include one life science and one physical science. One course must be a laboratory course.

LIFE SCIENCES

BIO 104 - Biological Diversity (L1 900L)

BIO 105 - Microbes and You (L1 903L)

BIO 106 - Animals and Society (L1 902L)

BIO 107 - Plants and Society (L1 901L)

BIO 125 - Human Biology (L1 904L)

BIO 144 - Introduction to Human Heredity (L1 906)*

BIO 146 - Environmental Biology (L1 905)*

BIO 149 - Principles of Biology (L1 900L)

BIO 151 - General Biology I (L1 910L)

BIO 152 - General Biology II (L1 910L)

* Denotes non-lab sciences

PHYSICAL SCIENCES

ASTR 101 - Descriptive Astronomy (P1 906)*

CHEM 100 - Fundamentals of Chemistry (P1 903L)

CHEM 101 - General Chemistry I (P1 902L)

CHEM 104 - Chemistry and Society (P1 903)*

GEOG 111 - Phys. Geography Weather & Climate (P1 909L)

GEOG 112 - Phys. Geography Landforms (P1 909L)

GEOL 101 - Principles of Physical Geology (P1 907L)

PHSCI 125 - Life in the Universe (P9 900)*

PHYS 100 - Basic Physics (P1 900L)

PHYS 110 - Physics of Sound, Music, & Hearing (P1 901L)

PHYS 101 - General Physics I (P1 900L)

PHYS 201 - Engineering Physics 1 (P2 900L)

* Denotes non-lab sciences

Category V – Mathematics (4 hrs.)

MATH 128 - Elementary Statistics (M1 902)

MATH 137 - Introduction to Discrete Mathematics (M1 905)

MATH 150 - Mathematics Analysis for Business (M1 900B)

MATH 153 - Finite Mathematics (M1 906)

MATH 170 - Calculus with Analytical Geometry I (M1 9001)

MATH 171 - Calculus with Analytical Geometry II (M1 9002)

MATH 172 - Calculus for Analytical Geometry III (M1 9003)

ENGINEERING Majors Information

Math: Take the placement test and begin your math classes your first semester at JJC. Your SAT/ACT/GED/HiSET/TASC scores can only place you into MATH 138 or 142 at the highest. In order to start at a higher level in math you must take the ALEKS placement test. Individual, customized study modules are available online after you take the ALEKS test the first time. Study and retest if you did not place as high as you expected on your first testing attempt. MATH 142 is a refresher/review course for students who already had pre-calculus and trigonometry. It is not intended for students learning the material for the first time.

****Typical MATH sequence for Engineering transfer: MATH 170-171-172-220 (+210 for some disciplines/transfers)****

Biology: Engineering majors do not generally need advanced levels of Biology unless you are majoring in Bioengineering. A non-lab Biology such as BIO 144 or BIO 146 is recommended.

Chemistry: Most engineering majors will be expected to take CHEM 101. If you did not have Chemistry in high school, you will also need to take CHEM 100 prior to 101. Also, check CHEM courses for appropriate Math and English prerequisites. Some engineering disciplines and specific transfer schools may require CHEM 102. (CHEM 209, 210 for chemical engineering majors)

Physics: Engineering majors must take Engineering Physics, (PHYS 201-202 and possibly 203) which is calculus-based. Note the math prerequisites for the Physics sequence as described in the course catalog; Math 170 is a required prerequisite for Physics 201.

Grades: The transfer options available for engineering majors are typically very competitive, so good grades are important.

Load: To get a good grade (A or B) in science and math classes, you will need to spend a lot of time studying outside of class. A student can expect to spend 2-3 hours outside of class studying for every hour in class.

For example:

PHYS 201: 5 credits & 7 contact hours = **Total Time** of 21-28 hours a week.

CHEM 101: 5 credits & 7 contact hours = **Total Time** of 21-28 hours a week.

To maintain a competitive grade point average, some students will require more than two (2) years to complete general education requirements that include the math and science sequences.

We also encourage you to utilize the following JJC resources:

Testing Services: <https://www.jjc.edu/student-resources/testing-services>

Career Services: <https://www.jjc.edu/student-resources/career-services>

Student Advising Center: <https://www.jjc.edu/student-resources/student-advising-center>

Transfer Information: <http://www.jjc.edu/getting-started/admissions/transfer-information>

ENGINEERING SUGGESTED SEMESTER BY SEMESTER SEQUENCE

YEAR 1 FALL		YEAR 1 SPRING		YEAR 2 FALL		YEAR 2 SPRING	
Course	Hours	Course	Hours	Course	Hours	Course	Hours
MATH 170	5	MATH 171	4	MATH 172	4	MATH 220	3
CHEM 101	5	PHYS 201	5	PHYS 202	5	ELECTIVE(s)	5
ENG 101	3	ENG 102	3	COMM 101	3	GE 3	3
(EGR 101)	4	GE1	3	GE 2	3	GE 4	3
						BIO	3
TOTAL	17	TOTAL	15		15		17

Gen Ed – 4 classes required: Social Science (2), Humanities (1), Fine Arts (1)

GE:

NOTES:

- The suggested course sequences shown are for the student who places directly into MATH 170 Calculus I. If prerequisite MATH courses are required, the sequence must be modified to accommodate the additional courses as well as Physics courses. Student must complete MATH 170 prior to starting the Physics sequence.
- Check prerequisites for CHEM 101 for Math and English placement and CHEM 100 or HS chemistry.
- GE courses can be taken in any semester in any order.
- The summer semesters can be utilized to progress the math sequence if necessary.
- The summer semesters may also be utilized for GE courses to reduce the number of semester credit hours in fall and/or spring.

Engineering Discipline Specific Majors:

- Physical Engineering Disciplines: Mechanical, Civil, Structural, etc. Engineering:
 - Recommended: EGR 101 Graphics, EGR 201 Statics, EGR 202 Dynamics
- Computer/Electrical Engineering Disciplines:
 - A sequence in CIS courses may be required/recommended: CIS 122-CIS130/136-CIS 230/236/246-CIS 261/269
- Chemical Engineering Disciplines:
 - Chemistry sequence recommended: CHEM 101, 102, 209, 210

See the Engineering faculty advisor to customize your engineering pathway.